10 "Arch. Bogdan Tomalevski" Str.
Mladost 4, 1715 Sofia, Bulgaria
Tel.: +359 2 448 57 44
Fax.: +359 2 448 57 49
www.safetyeng.eu

EUR: BG75UNCR70001520885679
BGN: BG32UNCR70001520885677
Bank: UniCredit Bulbank AD
BIC code: UNCRBGSF
VAT number: BG 175376730

Safety Engineering on belay Autobelay device

Model: on belay 8, on belay 11 and on belay 14
on belay 17

Installation and User Manual

WARNING: ***DO NOT INSTALL OR OPERATE THE DEVICE UNTIL YOU HAVE FULLY READ AND FULLY UNDERSTOOD THIS MANUAL!!***

10 "Arch. Bogdan Tomalevski" Str.
Mladost 4, 1715 Sofia, Bulgaria
Tel.: +359 2 448 57 44
Fax.: +359 2 448 57 49
www.safetyeng.eu

EUR: BG75UNCR70001520885679
BGN: BG32UNCR70001520885677
Bank: UniCredit Bulbank AD
BIC code: UNCRBGSF
VAT number: BG 175376730

WARNING!! PLEASE READ CAREFULLY.

- SAFETY ENGINEERING **Onbelay** autobelay device is designed and tested specifically for CLIMBING, MOUNTAINEERING AND TECHNICAL ROPE WORK.

- The user is responsible for following all applicable regulations regarding the use of the product.

- All of these activities are inherently dangerous and present the risk of serious injury and/or DEATH if device is not properly maintained.

- The product information contained in the catalogues and brochures is not a substitute for qualified personal instruction. Any person using SAFETY ENGINEERING products is responsible for obtaining qualified instruction on the proper use, techniques and limitations involved in such use.

- Inspect all equipment before each use and destroy any gear that is damaged, worn or does not pass inspection. Any person using SAFETY ENGINEERING products is responsible for the proper care and maintenance of these products.

IMPROPER USE, ABUSE AND/OR LACK OF PROPER MAINTENANCE WILL INCREASE THE RISK OF SERIOUS INJURY OR DEATH AND WILL VOID ANY WARRANTY.

IF IN DOUBT, REPLACE THE SUSPICIOUS GEAR!

ANY PERSON USING SAFETY ENGINEERING PRODUCTS IN ANY MANNER ASSUMES ALL RISKS AND ACCEPTS FULL RESPONSIBILITY FOR ANY DAMAGE OR INJURY, INCLUDING DEATH, WHICH MAY RESULT FROM THE USE OF ANY SAFETY ENGINEERING PRODUCT.

IF THE PRODUCT IS NOT DIRECTLY PURCHASED FROM SAFETY ENGINEERING, THE DISTRIBUTOR / WHOLESALER / RETAILER IS RESPONSIBLE FOR PROVIDING THIS WARNING INFORMATION TO THE CUSTOMER.

10 "Arch. Bogdan Tomalevski" Str.
Mladost 4, 1715 Sofia, Bulgaria
Tel.: +359 2 448 57 44
Fax.: +359 2 448 57 49
www.safetyeng.eu

EUR: BG75UNCR70001520885679
BGN: BG32UNCR70001520885677
Bank: UniCredit Bulbank AD
BIC code: UNCRBGSF
VAT number: BG 175376730

Table of content

	Page
Limited Warranty	4
General Information	**5**
Description of the **Onbelay** autobelay device	5
Technical Specifications of **Onbelay 8, Onbelay 11, Onbelay 14 and Onbelay 17**	5
Device identification	6
Cable identification	6
The intended purpose of the device	7
Safety rules	**7**
Cable Inspection	9
Quick Link, Swivel and Karabiner inspection	9
Checking and adjusting the air pressure	10
Checking the oil level	10
Testing the Brake action and pull up force	10
Brief instructions (pictographic)	11
Daily Check List	12
Installation	**13**
Installing **Onbelay** autobelay to a Climbing wall and with Climbing wall drawings	14
Installation to a steel structure with SAFETY ENGINEERING mounting brackets	16
Installation to a structure with custom made brackets	16
Installation to a floor and/or existing wall	17
Davit installation	19
Maintenance	**20**
Replacing the cable	20
Oil adding	22
Fixing oil leaks	22
Adjusting the air pressure	23
Checking for air leaks	23
If you have a Warranty claim	23
Onbelay autobelay Service/Repair Request Form	24
Maintenance log	25

10 "Arch. Bogdan Tomalevski" Str.
Mladost 4, 1715 Sofia, Bulgaria
Tel.: +359 2 448 57 44
Fax.: +359 2 448 57 49
www.safetyeng.eu

EUR: BG75UNCR70001520885679
BGN: BG32UNCR70001520885677
Bank: UniCredit Bulbank AD
BIC code: UNCRBGSF
VAT number: BG 175376730

ONBELAY AUTO BELAY
LIMITED WARRANTY

PLEASE READ THIS WARRANTY CAREFULLY.

The benefits granted by this Limited Warranty are in addition to any rights and/or remedies you may have under applicable consumer protection legislation.

SAFETY ENGINEERING (the "Seller") warrants to you, the original purchaser, that this Product will be free from defects in materials and workmanship for a period of one (1) year from the date of purchase (the “Warranty Period”). This Limited Warranty is not transferrable.

If, within the specified Warranty Period, the Product shall be reasonably proven to be defective, the Seller will, at its option, repair or replace the Product, or a defective part thereof, without charge to you for either parts or labor. To the extent permitted by applicable law, such repair or replacement shall be your exclusive remedy under this Limited Warranty. The Seller may, in its sole discretion, replace the defective Product with the same or a functionally equivalent product. Replacement products or parts may be refurbished or contain refurbished materials. Repaired or replacement products will be warranted for the remainder of the original Warranty Period.

This Limited Warranty does not apply to consumable parts (such as cables and pulleys) and does not extend to any product that has been damaged or rendered defective (a) as a result of normal wear and tear; (b) by the use of parts not manufactured or supplied by the Seller; (c) by modification of the Product; (d) as a result of service rendered by anyone other than the Seller or its authorized service provider; (e) as a result of the Product being operated otherwise than in accordance with the Sellers’s User's Manual and/or instructions; (f) as a result of accident, misuse, abuse, improper or inadequate maintenance.

No reseller, agent, or employee of the Seller is authorized to make any modification, extension, or addition to this Limited Warranty.

To the maximum extent permitted by applicable law, the foregoing warranties and remedies are exclusive and are in lieu of all other warranties, representations, and conditions of any kind, express or implied, including, but not limited to, the implied warranties or conditions of merchantability and fitness for a particular purpose and/or any implied warranty or condition of non-infringement. Some States and jurisdictions do not allow the exclusion of express or implied warranties, so the above exclusion may not apply to you. In that event, such warranties apply to the extent required by law and are limited in duration the Warranty Period. No warranties apply after that period. Some States or jurisdictions do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

To the maximum extent permitted by applicable law, in no event shall the Seller or its suppliers be liable for any damages whatsoever (including without limitation, direct or indirect damages for personal injury, loss of business profits, business interruption, loss of business information, or any other pecuniary loss) arising out of the use of or inability to use this product, even if the Seller has been advised of the possibility of such damages. Some States or jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so this limitation or exclusion may not apply to you.

Serial Number of the Autobelay: .....
Date: .....

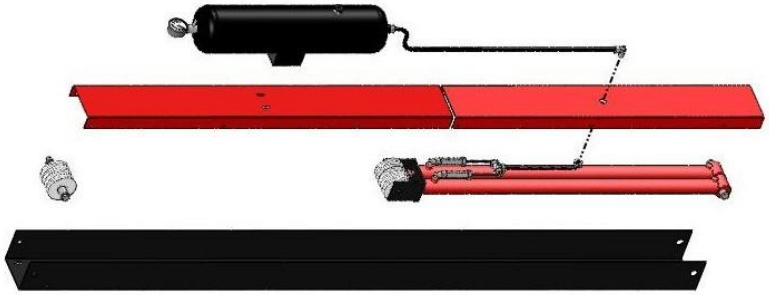
Clients's signature: .....
/...../

10 "Arch. Bogdan Tomalevski" Str.
Mladost 4, 1715 Sofia, Bulgaria
Tel.: +359 2 448 57 44
Fax.: +359 2 448 57 49
www.safetyeng.eu

EUR: BG75UNCR70001520885679
BGN: BG32UNCR70001520885677
Bank: UniCredit Bulbank AD
BIC code: UNCRBGSF
VAT number: BG 175376730

General Information

Description of the SAFETY ENGINEERING Onbelay autobelay device



The SAFETY ENGINEERING **Onbelay** autobelay device is an automatic fully redundant safety device for controlled descend for use for example in: artificial climbing walls, Funwalls, rescue, stunts and shows. It is for securing one individual from above without assistance by a second person.
The **Onbelay** autobelay is an air-over-hydraulics unit that consists of body, hydraulic rams, series of pulleys, pressurized tank and a steel cable. The climber is attached to the end of the steel cable.
When the climber ascends – the pressure in the tank forces the fluid into the pistons thus retracting them and through the series of pulleys retracts the cable.
When a person falls or descends, the created pull forces the hydraulic fluid out through an orifice thus limiting the descent speed to 1 m/s regardless of the climber weight. The forced hydraulic fluid then goes into the pressurized tank. The **Onbelay** autobelay is mounted behind the climbing wall and the steel cable is guided above and in front of the climbing wall through pulleys on a davit.

Technical Specifications of SAFETY ENGINEERING Onbelay autobelay device, models Onbelay 8, Onbelay 11 and Onbelay 14:

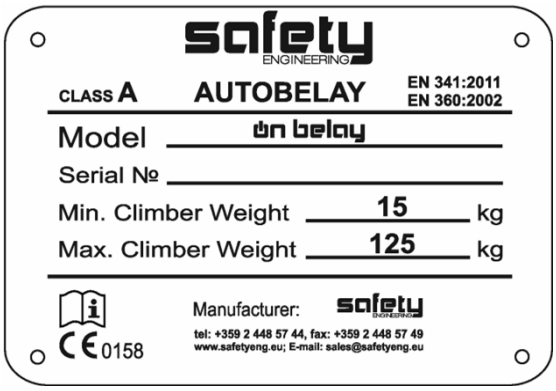
Dimensions (H/W/D):	2000x160x390 mm 2500x160x390 mm 3125x160x390 mm 2500x230x390 mm	- For **Onbelay 8** - For **Onbelay 11** - For **Onbelay 14** - For **Onbelay 17**	
		Descent Speed:	approx. 1.00 m/s
Weight:	60 kg/75kg/100 kg/85 kg	**Onbelay 8/11/14/17**	
		Max. retract speed:	approx. 1.50 m/s
Stroke:	7.35 m - For **Onbelay 8** 10 m - For **Onbelay 11** 13 m - For **Onbelay 14** 16 m - For **Onbelay 17**	Brake:	Air over hydraulic system with 2 pistons and check valve
Type of cable:	Steel cable DIN3069	Diameter of cable:	6 mm
Safe load:	1 Person	Inspection interval:	At least once yearly, depending on the degree of loading and conditions of use, this may be more frequent
Min. climber weight:	15 kg	Max. climber weight:	125 kg

The SAFETY ENGINEERING **Onbelay** autobelay device meets the following relevant safety regulations and rules relevant to this technology:

Onbelay 8/11/14/17	EN 341:2011 / EN 360:2002	CE 0158
Quick link:	EN 362:2004 / EN 12275 Type Q	CE marked
Swivel:	PPE Directive 89/686/EEC	CE marked
Karabiner:	EN 362:2004 / EN 12275 Type B	CE marked
Instructions for use / Identification	EN 365	

Device identification

Manufacturer:
SAFETY ENGINEERING Ltd
10 "Arch. Bogdan Tomalevski"Str.
Mladost 4
1715 Sofia, BULGARIA



Notified body:
DEKRA EXAM GmbH
Str. Dinnendahlstr. 9
D-44809 Bochum,
Germany
CE 0158

Type: Autobelay
Class of the device: Class A
Standard/Year: EN 341:2011 / EN 360:2002
Model: Onbelay 8, Onbelay 11, Onbelay 14 or Onbelay 17 (For walls up to 8m, 11 m, 14m or 17 m high)
Serial No: AA-MMYY-LLLL-NNNN (AA - 08 for **Onbelay 8;** 11 for **Onbelay 11,** 14 for **Onbelay 14** or 17 for **Onbelay 17** – model of the unit ; MMYY - Month & year of manufacture; LLLL- cable length in cm; NNNN – Number of the unit of this model)
Min. Climber Weight: Minimal bodyweight of the climber, in kg.
Max. Climber Weight: Maximal bodyweight of the climber, in kg.
Read the instruction for use: Pictogram (book)
Manufacturer Name, Logo: SAFETY ENGINEERING Logo.
Tel.: +359 2 448 57 44; Fax: +359 2 448 57 49;
Web address: www.safetyeng.eu; E-mail: sales@safetyeng.eu

Cable identification

WARNING: The steel cable MUST be changed at least once per year or if used intensively (orientation: about 40 000 descends under full load). We strongly suggest keeping track of the cable manufacturing date and ordering replacement cables at least 1 (one) month earlier in order to reduce the unit's downtime.

The cable length (in centimeters, with "**L**" in front) and cable manufacturing date (month and year) are stamped on a sleeve at the climber's end of the cable:

Length, in centimeters; Manufacturing MONTH and YEAR

If, for any reason, the sleeve information is not retrievable, immediately stop using the unit and order new cable. The cable length, in centimeters, could be found on 2 more locations:

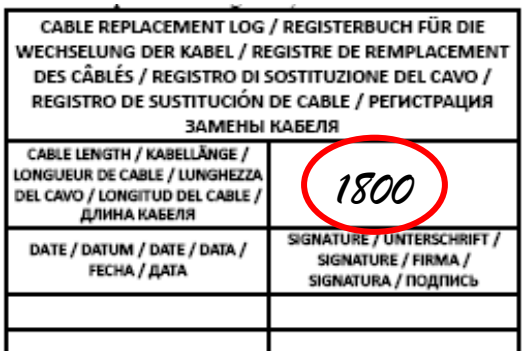
10 "Arch. Bogdan Tomalevski" Str.
Mladost 4, 1715 Sofia, Bulgaria
Tel.: +359 2 448 57 44
Fax.: +359 2 448 57 49
www.safetyeng.eu

EUR: BG75UNCR70001520885679
BGN: BG32UNCR70001520885677
Bank: UniCredit Bulbank AD
BIC code: UNCRBGSF
VAT number: BG 175376730

- Encoded in the unit's serial number:

Digits 7, 8, 9 and 10 are the cable length in centimeters

- Written on the cable replacement log table:



CABLE REPLACEMENT LOG / REGISTERBUCH FÜR DIE WECHSELUNG DER KABEL / REGISTRE DE REMPLACEMENT DES CÂBLÉS / REGISTRO DI SOSTITUZIONE DEL CAVO / REGISTRO DE SUSTITUCIÓN DE CABLE / РЕГИСТРАЦИЯ ЗАМЕНЫ КАБЕЛЯ	
CABLE LENGTH / KABELLÄNGE / LONGUEUR DE CABLE / LUNGHEZZA DEL CAVO / LONGITUD DEL CABLE / ДЛИНА КАБЕЛЯ	1800
DATE / DATUM / DATE / DATA / FECHA / ДАТА	SIGNATURE / UNTERSCHRIFT / SIGNATURE / FIRMA / SIGNATURA / ПОДПИСЬ

These instructions for use apply to:
SAFETY ENGINEERING **Onbelay 8, Onbelay 11, Onbelay 14** or **Onbelay 17** autobelay devices, designed according to EN 341, with 7,35m, 10 m, 13 m or 16 m stroke including Karabiner EN 362:2004 with triple action automatic locking device.

The intended purpose of the Onbelay autobelay device. Safety rules.

- The **Onbelay** autobelay device must only be used when in acceptable technical condition and only for its intended purpose. In case of any malfunctioning, its operation must be stopped immediately and the unit has to be inspected.
- The supplier/manufacturer shall not be liable for any damage due to the improper use of or alteration to the SAFETY ENGINEERING **Onbelay** autobelay device.
- Only in combination with the anchoring/mounting construction and the certified climbing harness the **Onbelay** autobelay device becomes an effective system.
- The **Onbelay** autobelay device does not hold the user but rather allows him or her to descend with controlled speed. Therefore there must be no hindrance to the descent or opportunities for snagging, banging or bumping.
- Be absolutely sure to practice controlled descending.
- Always control correct retracting process.

WARNING!

If the descent process is interrupted or if the user freezes on top / gets snagged on anything, he or she must not change the position they have taken, even if it is uncomfortable. The safety cable must remain tautly connected to the user. It is forbidden to unlatch from the karabiner or pull the safety cable out. A rescue operation would then have to be initiated. To do so, use a ladder or run a safety rope or similar rescue techniques. In such situations, this is the only way to guarantee safety from falling.

- If the cable retracting process is interrupted with the effect that the cable becomes loose and flabby, you have to stop climbing immediately. Before climbing the user has to check that the **Onbelay** autobelay device and its cable are functioning correctly.

10 "Arch. Bogdan Tomalevski" Str.
Mladost 4, 1715 Sofia, Bulgaria
Tel.: +359 2 448 57 44
Fax.: +359 2 448 57 49
www.safetyeng.eu

EUR: BG75UNCR70001520885679
BGN: BG32UNCR70001520885677
Bank: UniCredit Bulbank AD
BIC code: UNCRBGSF
VAT number: BG 175376730

- The steel cable of the **Onbelay** autobelay device has to be changed at least once per year or if used intensively (orientation: about 40,000 descends under full load). Negligence will result in a destroyed cable and serious injuries / death of the user!
- Climbing holds must be positioned and designed in a way that in the upper range no crosswise, repel or pendulum deflections are possible and climbing above the davit to be impossible.
- The descent area must be clear of any people, obstacles or possibilities of snagging.
- The steel cable must not run over any edges or be deflected by karabiners.
- Operation must be discontinued if there are any indications of thunderstorms or if darkness sets in.
- The autobelay device must not be exposed to extreme temperatures (<-15°C, >+65°C), chemicals, high humidity over a long period of time or to be splashed with water, aggressive sea-air, sand, dust etc.
- The **Onbelay** autobelay device cable must be kept free of dirt. DO NOT use solvents to remove grease/dirt.
- SAFETY ENGINEERING **Onbelay** autobelay device may only be used by one individual who has been shown what is involved, especially the function of karabiner, how to ascend and descend, and only with support being provided by trained personnel. A basic knowledge of climbing is a prerequisite.
- Users must be in good physical condition suitable for this sport.
- The full body or climbing harness used in conjunction with the **Onbelay** autobelay device must be in perfect condition. It must be ensured, that the climber cannot fall out of the harness irrespective of the position they are hanging. A slip out from the climbing belt must be impossible. Only a full body harness or sit harness in conjunction with a chest harness may be used with a roping ring or safety ring in front in accordance with EN 361. Allowed in this connection are complete harness A from 40 kg to 100 kg and small-body harness B under 40 kg (for children and adolescents).
- Harnesses and clothing have to fit snugly on the body. Do not take any loose objects along with you like mobile phones, keys, coins, eyeglasses (unless they are shatterproof and attached to the wearer)
- A performance test has to be carried out each time before using the autobelay device.
- Examine whether the karabiner is clean and if it locks smoothly and automatically.
- When the cable is pulled out, it must be possible to feel the braking effect.
- When testing the proper retracting of the cable, the cable has to retract all the way in.
- When climbing up, no slack on the cable must be allowed to form.
- The cable should be retracted when out of operation. Do not let the cable to retract freely but rather with the aid of a pilot rope.
- Excessive crosswise movement and jumping onto the safety cable is not allowed.
- The user must not twist around when rappelling or after landing.
- The rescue possibilities required must be provided in case any excess speed is triggered or in case of any other blocking or snagging. Means of rescue are, for example, climbing rope, climbing clamps, ladders, etc.

If not otherwise arranged by the operating organization, liability shall be ruled out for:

  - Individuals under the influence of drugs;
  - Individuals weighing under 15 kg;
  - Using one's own harness or karabiner and the consequences associated with such;
  - Dirtying of clothes if any lubricant escapes (device, cable).

- The operating organization and/or contractor shall be obliged to ensure that these instructions for use as well as its appended regulations are always accessible and that at least one set of brief instructions are in the immediately vicinity of the location of use.

10 "Arch. Bogdan Tomalevski" Str.
Mladost 4, 1715 Sofia, Bulgaria
Tel.: +359 2 448 57 44
Fax.: +359 2 448 57 49
www.safetyeng.eu

EUR: BG75UNCR70001520885679
BGN: BG32UNCR70001520885677
Bank: UniCredit Bulbank AD
BIC code: UNCRBGSF
VAT number: BG 175376730

Cable Inspection

You have to wear working gloves or to use a rag!

Examine the steel cable and the easy-going retraction function over the entire length of cable daily before first use for the day. To do this - pull the cable all the way out and let the cable run back slowly through your hand up to the protecting tube. After that push back the protection tube and examine this part of the cable.

The **Onbelay** autobelay cable has to be replaced immediately in case of the following damage:

- Missing or damaged cable identification sleeve;
- If there is rust on the cable
- If there are more than 10 broken wires within the whole length of the cable e.g. 1 broken wire in the handling range (thimble and above the blue protecting cover)
- If the cable shrinks to < 5.6 mm
- If there are any deformations/defects of the cable as shown:

Rust damage

Kink

Bruise

Cable fraction

Basket like deformation

Cable fraction at the thimble

Quick Link, Swivel and the Karabiner inspection

- Inspect the quick link to be securely closed. Make sure that it is not possible to open it with hand.
- Inspect the swivel for any damage and check for smooth operation with no rattle.
- The karabiner is only safe if it locks automatically. This means it should be checked daily for smooth operation. Immediately replace the karabiner if the rotation cylinder or the closing or locking mechanism does not function smoothly even after cleaning or if there is any deformation/wear.

WARNING: Make sure that the system **quick link + swivel + karabiner** is properly aligned prior every use!

10 "Arch. Bogdan Tomalevski" Str.
Mladost 4, 1715 Sofia, Bulgaria
Tel.: +359 2 448 57 44
Fax.: +359 2 448 57 49
www.safetyeng.eu

EUR: BG75UNCR70001520885679
BGN: BG32UNCR70001520885677
Bank: UniCredit Bulbank AD
BIC code: UNCRBGSF
VAT number: BG 175376730

Checking and adjusting the air pressure

Using a pilot rope let the cable retract all the way up to the top of the wall. In this condition check the air pressure in the tank. For all models **Onbelay** it must be 4.8 ÷ 5.2 bar (70 ÷ 75 PSI). If it is less – use an air compressor or a large bicycle/automotive pump to add pressure.

Checking the oil level

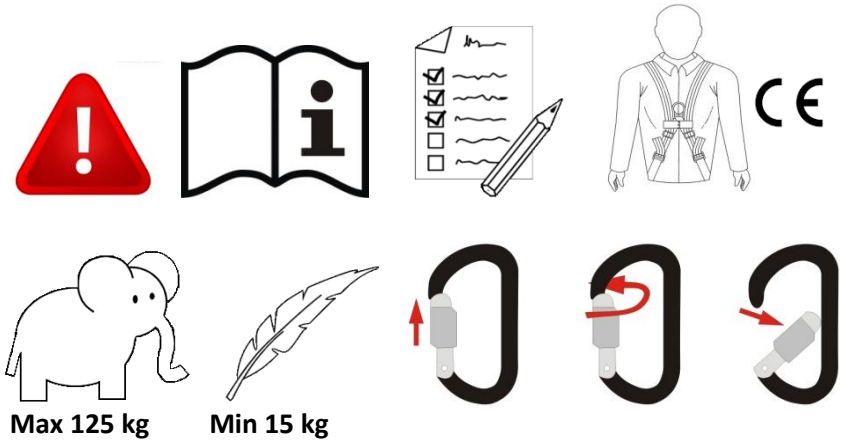
With **Autobelay** in vertical position and cable fully retracted, check the oil level thru the sight glass – the oil must be visible and above the medium of the glass. If less – perform the **Oil adding** procedure.

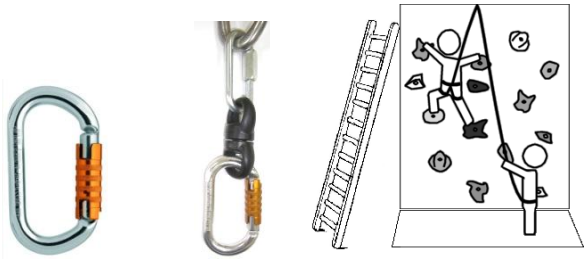
Testing the Brake action and pull up force

Before first use for the day, grab the cable end and pull with significant amount of force. You should feel the braking force of the **Onbelay** autobelay, yet still be able to pull the cable with constant speed.
Attach a pilot rope to the karabiner and let the cable retract all the way to the top of the wall. During the entire retraction you should fill a constant pulling force of about 5 kg (10-11 lbs). The cable retraction must be with uniform speed and tension. If the movement is jerky or without full retraction to the top of the wall – Check for the following: any obstructions on the way, jammed davit pulleys, low air pressure and oil level.

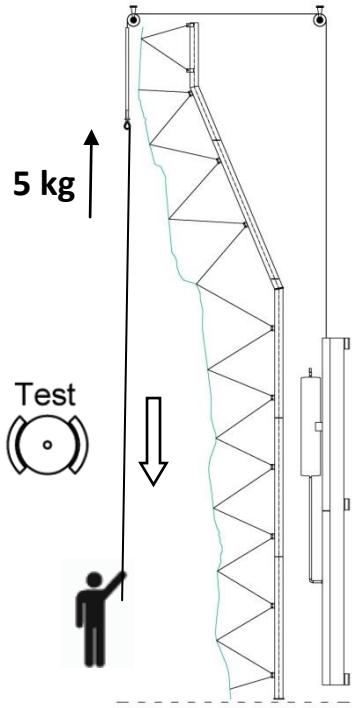
safety ENGINEERING
10 "Arch. Bogdan Tomalevski" Str.
Mladost 4, 1715 Sofia, Bulgaria
Tel.: +359 2 448 57 44
Fax.: +359 2 448 57 49
www.safetyeng.eu
EUR: BG75UNCR70001520885679
BGN: BG32UNCR70001520885677
Bank: UniCredit Bulbank AD
BIC code: UNCRBGSF
VAT number: BG 175376730

Brief Instructions:

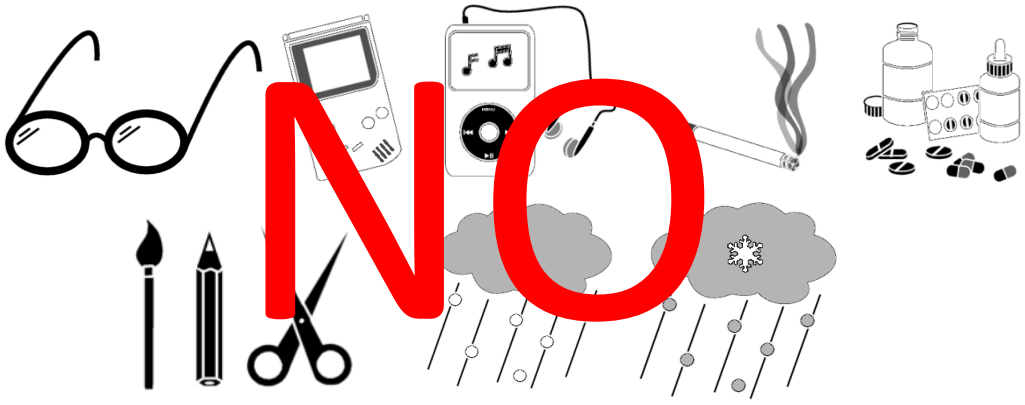




Rescue methods

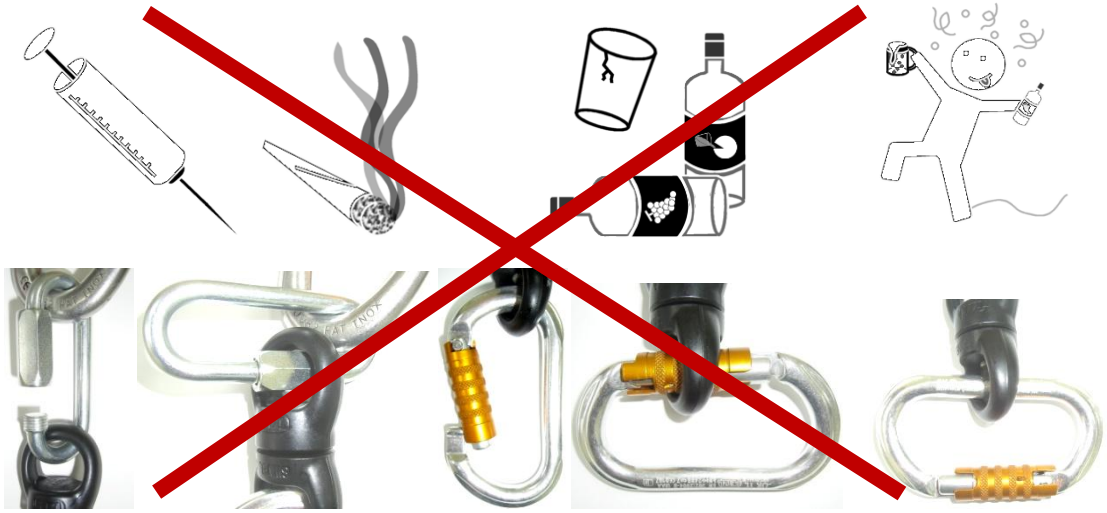


WARNING



DANGER

DEADLY



This page may be copied

safety ENGINEERING
10 "Arch. Bogdan Tomalevski" Str.
Mladost 4, 1715 Sofia, Bulgaria
Tel.: +359 2 448 57 44
Fax.: +359 2 448 57 49
www.safetyeng.eu
EUR: BG75UNCR70001520885679
BGN: BG32UNCR70001520885677
Bank: UniCredit Bulbank AD
BIC code: UNCRBGSF
VAT number: BG 175376730

DAYLY CHECK LIST

Inspection performed by:…… Date:…….
/Print name clearly/

INSPECTION POINT	RESULT	REMARKS/ACTIONS
Cable inspection (damages, rust, broken wires, etc.)	OK / NOT OK	
Quick link (closed, tight, proper position, etc)	OK / NOT OK	
Swivel operation (damage, rotation, noise, etc.)	OK / NOT OK	
Karabiner operation (smooth auto locking, damage, proper position, etc.)	OK / NOT OK	
Brake action and pull up force Test (full retraction with pilot rope, braking effect, jerky movement, etc.)	OK / NOT OK	
Oil level (fully retracted – oil visible thru sign glass)	OK / NOT OK	
Air pressure – 4.8 ÷ 5.2 bar (70 ÷ 75 PSI)	OK / NOT OK	
Abnormal oil leaks (small drops – OK, big stains – NO)	YES / NO	
Cable pulleys (abnormal wear or noise, etc.)	YES / NO	

WARNING: *Descriptions in the table are brief and as a reminder! They DO NOT substitute the full understanding of the procedures. If in doubt - refer to the full instructions in the manual for the complete inspection steps description!*

Signature:……

DAYLY CHECK LIST

Inspection performed by:…… Date:…….
/Print name clearly/

INSPECTION POINT	RESULT	REMARKS/ACTIONS
Cable inspection (damages, rust, broken wires, etc.)	OK / NOT OK	
Quick link (closed, tight, proper position, etc)	OK / NOT OK	
Swivel operation (damage, rotation, noise, etc.)	OK / NOT OK	
Karabiner operation (smooth auto locking, damage, proper position, etc.)	OK / NOT OK	
Brake action and pull up force Test (full retraction with pilot rope, braking effect, jerky movement, etc.)	OK / NOT OK	
Oil level (fully retracted – oil visible thru sign glass)	OK / NOT OK	
Air pressure – 4.8 ÷ 5.2 bar (70 ÷ 75 PSI)	OK / NOT OK	
Abnormal oil leaks (small drops – OK, big stains – NO)	YES / NO	
Cable pulleys (abnormal wear or noise, etc.)	YES / NO	

WARNING: *Descriptions in the table are brief and as a reminder! They DO NOT substitute the full understanding of the procedures. If in doubt - refer to the full instructions in the manual for the complete inspection description!*

Signature:……

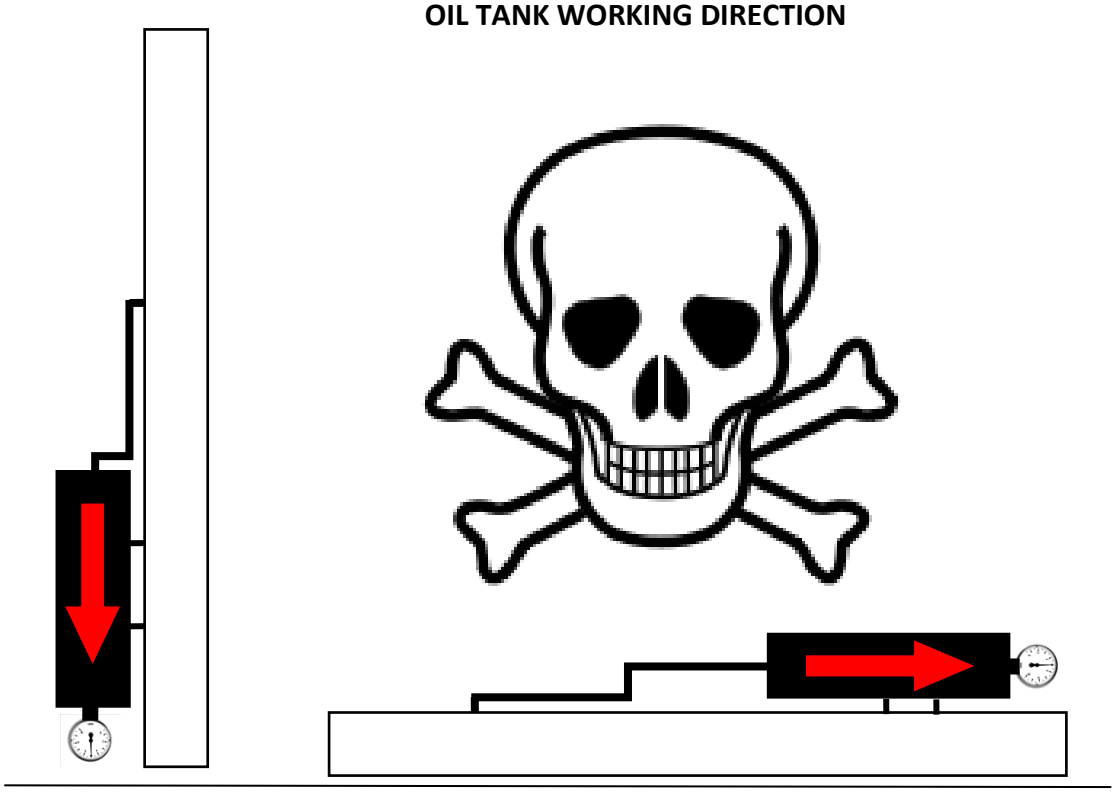
NOTE: Print several copies of this page and keep them on hand. Collect the filled ones and store them for reference

This page may be copied

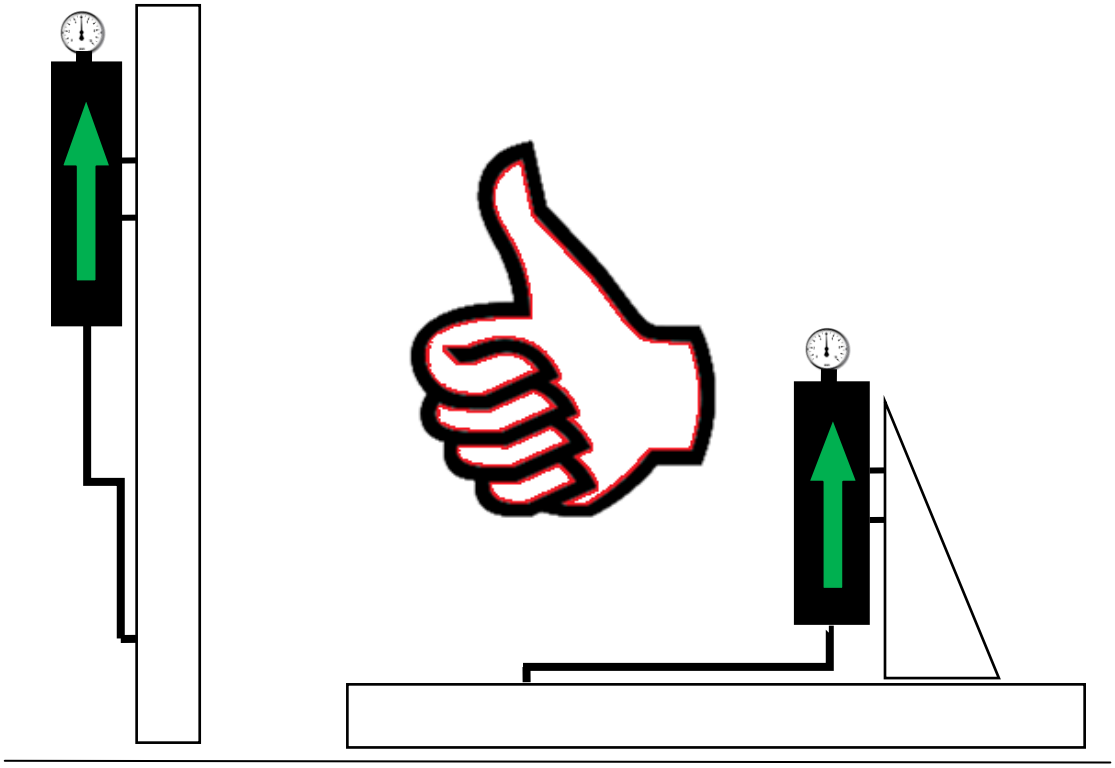
10 "Arch. Bogdan Tomalevski" Str.
Mladost 4, 1715 Sofia, Bulgaria
Tel.: +359 2 448 57 44
Fax.: +359 2 448 57 49
www.safetyeng.eu

EUR: BG75UNCR70001520885679
BGN: BG32UNCR70001520885677
Bank: UniCredit Bulbank AD
BIC code: UNCRBGSF
VAT number: BG 175376730

OIL TANK WORKING DIRECTION



GROUND



GROUND

Please read and follow these Instructions closely! In special cases – follow the general good practice rules for safe installation AND contact the Engineer of the project for written annex with instructions regarding all the changes.

10 "Arch. Bogdan Tomalevski" Str.
Mladost 4, 1715 Sofia, Bulgaria
Tel.: +359 2 448 57 44
Fax.: +359 2 448 57 49
www.safetyeng.eu

EUR: BG75UNCR70001520885679
BGN: BG32UNCR70001520885677
Bank: UniCredit Bulbank AD
BIC code: UNCRBGSF
VAT number: BG 175376730

Installing Onbelay to a Climbing wall with prefabricated fixings and Installation drawings

1. The **Autobelay** full set consists of:
   a. **Onbelay Autobelay**;
   b. Min. 2 sets of cable guiding pulley assemblies (Pulley with bushings, Shield, M16 Bolt and Nylock Nut);
   c. Davit bar, **Onbelay** Fixings (In case if they are not preassembled with the Climbing wall metal structure);
   d. Quick Link, Swivel and Carabineer;
   e. Documentations:
      i. User Manual – 1 pc. For every 3-4 **On belay**'s;
      ii. Warranty Card for EVERY Autobelay.

If any of the paper documents is missing – all are available in Safety Engineering's web site www.safetyeng.eu . You can also contact your Dealer to receive the latest versions.

2. Ate the climber's end of the **Onbelay** autobelay cable there is a sleeve with marking: **L xxxx**, where **xxxx** is the cable length, in ***cm***. The same length is in the **Onbelay**'s Serial No plate. In the drawings, on every **Onbelay** autobelay position is written the cable length – match each **Onbelay** autobelay to his corresponding position! If not sure – Contact your Dealer or the Engineer of the project for detailed instructions.
3. Pressurize the **Onbelay** autobelay to the proper working pressure. It must be 4.8 ÷ 5.2 bar (70 ÷ 75 PSI). This could be done after the complete installation as well, while the cable is fully retracted!

Rule of Thumb: If the **Onbelay** autobelay was Air Cargo – you must add oil prior the pressurizing – fully release the air pressure, unscrew the Oil level Sight glass and add oil. Use ONLY ATF fluid type DEXRON III or MERCON. About 3,5 l. per Unit.

4. Install the quick link, swivel and the triple action Karabiner. Some models may be without the Swivel.
5. Install the **Onbelay** autobelay without fully tightening it to the structure. If the unit is with separate anchoring hardware – install the hardware to the unit and position the unit. Secure it with a rope against falling.

Rule of Thumb: The autobelay has 2 sets of fixing holes – it must be secured to BOTH of them (Bottom + Top) AND must be at least 200 mm off the floor.

Rule of thumb: **Onbelay** autobelay positioning basics: the Cable SHALL NOT touch anywhere on the **On belay**'s body or to the steel structure AND there MUST be room to open it for servicing. It must be vertical – use spirit level or Plumb line!

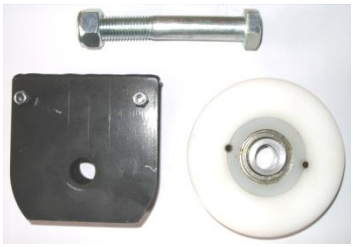
Rule of Thumb: If the **Onbelay** autobelay is installed while there is still rigging/structural assembly work above – make sure that the top of the unit is protected against falling objects!

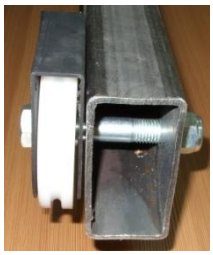
6. Let one person climb up with the **Onbelay** autobelay cable, the davit bar and the pulley assemblies. To ease the work, you can preassemble the pulleys with the cable to the davit while still on the ground.

Rule of Thumb: The assembly order for the cable pulley is as follows: Remove the bolt, insert the cable between the pulley and the shield (pay attention to the pulley bearing bushings). Insert the bolt and the entire Assembly – in the hole of the Davit.

10 "Arch. Bogdan Tomalevski" Str.
Mladost 4, 1715 Sofia, Bulgaria
Tel.: +359 2 448 57 44
Fax.: +359 2 448 57 49
www.safetyeng.eu

EUR: BG75UNCR70001520885679
BGN: BG32UNCR70001520885677
Bank: UniCredit Bulbank AD
BIC code: UNCRBGSF
VAT number: BG 175376730





7. The person up on the wall shall position the davit so the cable is exiting straight up and it does NOT touching anywhere on the structure or the **Onbelay** autobelay body.

Rule of Thumb: The Maximal overhang of the davit on either end shall NOT exceed 500 mm, in rare cases – up to 700 mm. If the overhang is bigger – consider a davit supporting bracket AFTER consulting the Engineer of the project AND after receiving a written confirmation from him!

8. After the alignment – tack-weld the davit to the structure and fasten the **Onbelay** autobelay body to the structure.
9. Double check the cable for contact with the structure or the **Onbelay** autobelay body. Weld permanently the davit to the position and finish the **Onbelay** autobelay anchoring (when the **Onbelay** autobelay is with separate fixing hardware).
10. With the cable fully retracted check the air pressure – must be 5 bars (working range 4 – 6 bars). Check the oil level – the oil must be visible thru the sight glass.

Rule of Thumb: If the **Onbelay** autobelay was Air Cargo – you must add oil prior the pressurizing – fully release the air pressure, unscrew the Pressure gauge and add oil. Use ONLY ATF fluid type DEXRON III or MERCON. About 3,5 l. per Unit. The oil must be visible thru the sight glass!

11. With the aid of a pilot rope cycle the **Onbelay** autobelay 2 - 3 times to prime it and to check the proper operation – smooth movement without any noises, jerky action or cable touching the structure!

DANGER: ALWAYS prime and check the Autobelay proper operation after the installation AND BEFORE FIRST USE! Failing to do so may cause serious injury or DEATH!

12. Fill, sign, date and stamp a Warranty card FOR EACH unit installed prior to FIRST USE!
13. Scan the signed warranty cards and send them both via E-mail and by mail to Safety Engineering Ltd. In order to validate the warranty.

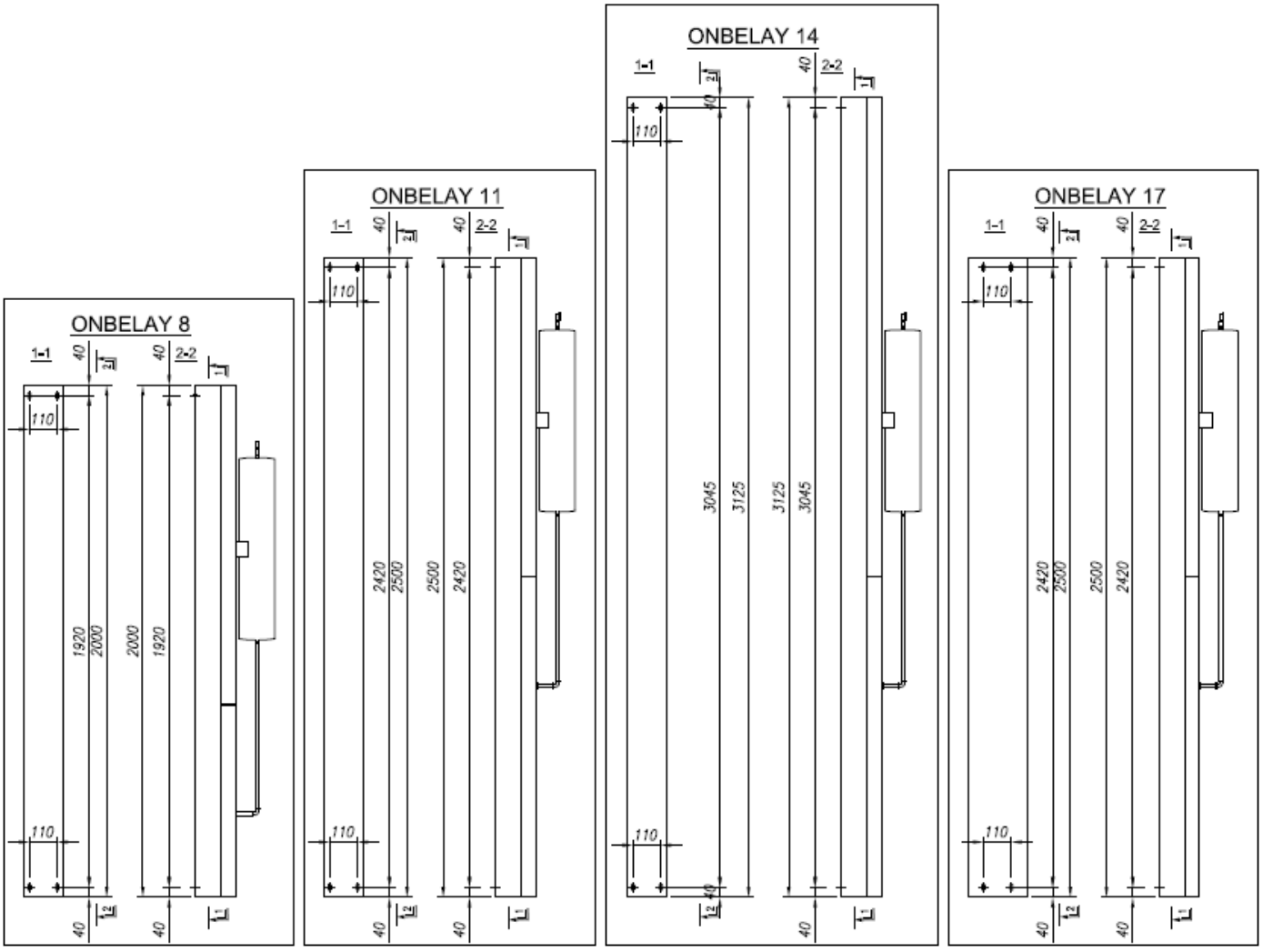
10 "Arch. Bogdan Tomalevski" Str.
Mladost 4, 1715 Sofia, Bulgaria
Tel.: +359 2 448 57 44
Fax.: +359 2 448 57 49
www.safetyeng.eu

EUR: BG75UNCR70001520885679
BGN: BG32UNCR70001520885677
Bank: UniCredit Bulbank AD
BIC code: UNCRBGSF
VAT number: BG 175376730

Installing Onbelay to a steel structure using SAFETY ENGINEERING mounting brackets:

Install the lower horizontal brackets by drilling the holes in the support beams and insert the bolts. Make sure that they are leveled and on an equal distance from the floor. Fasten the bolts. Install the top brackets with the same way while keeping the mounting distance according to the **Onbelay** autobelay mount holes distances. Do not tight fully the bolts. Mount the **Onbelay** autobelay by bolting it to the fixed bottom and the loose top brackets. Align the top bracket in a way that the device stays vertical. Tighten the bolts.

If needed, you may install the **Onbelay** autobelay from the outer side of the bracket simply by bolting the horizontal L shape cross bar with the flat part facing outwards.



Installing Onbelay to a structure using custom made brackets

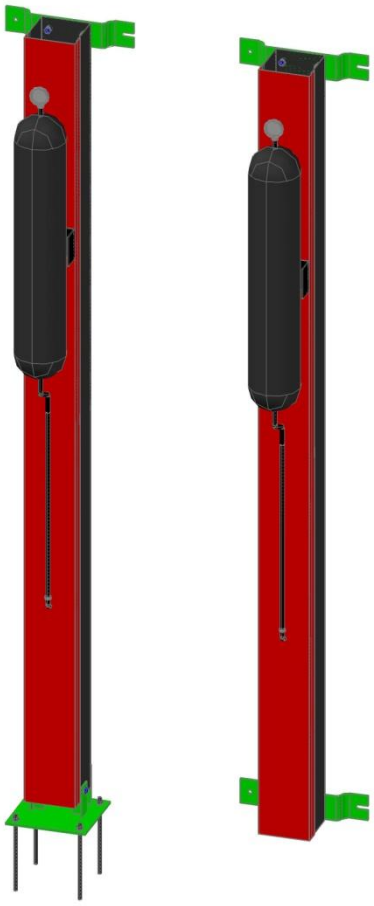
Main rules wile engineering and making the fixings are as follows:

- **Onbelay** autobelay must be connected on both top AND bottom fixings
- Support structure to be able to withstand the design load of 9 kN vertical force for EACH autobelay
- Each mounting bracket must withstand load of 9 kN vertical forces.

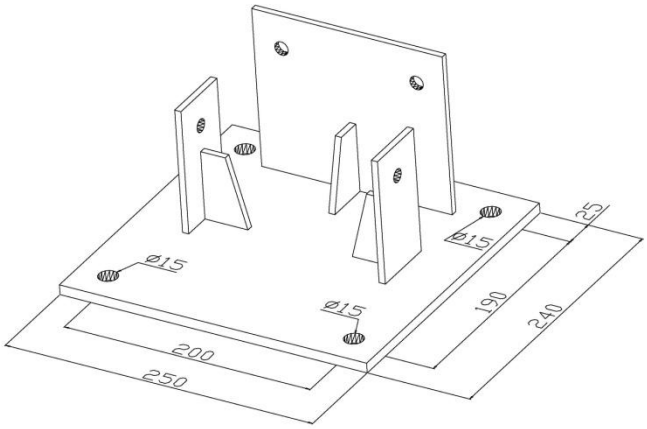
10 "Arch. Bogdan Tomalevski" Str.
Mladost 4, 1715 Sofia, Bulgaria
Tel.: +359 2 448 57 44
Fax.: +359 2 448 57 49
www.safetyeng.eu

EUR: BG75UNCR70001520885679
BGN: BG32UNCR70001520885677
Bank: UniCredit Bulbank AD
BIC code: UNCRBGSF
VAT number: BG 175376730

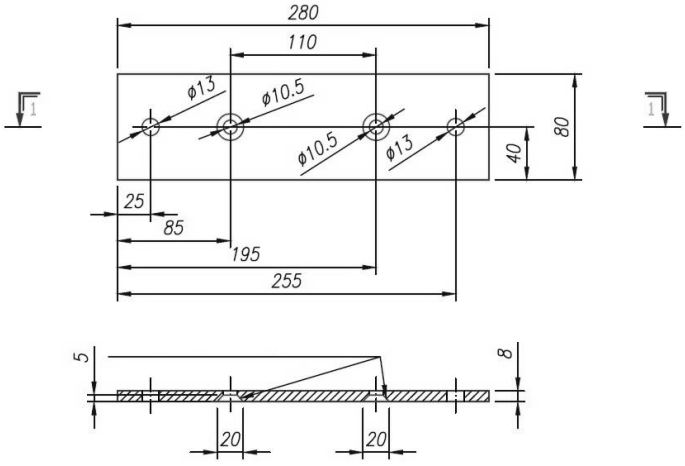
Installing Onbelay to a floor and/or existing wall:



Use ONLY SAFETY ENGINEERING original brackets:



Floor mount



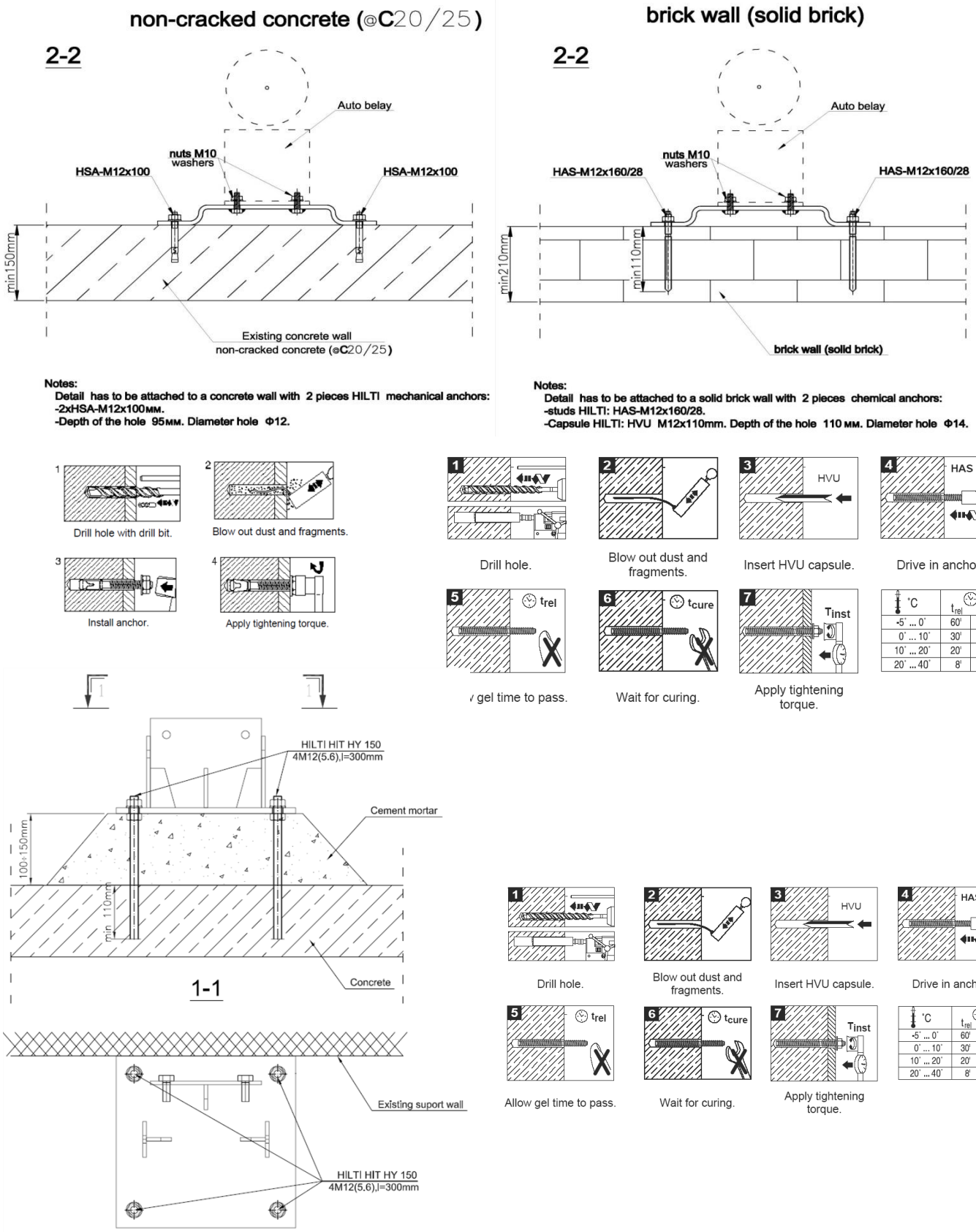
Wall Bracket

NOTE: We recommend for the anchoring to use HILTI anchors and glues. If you use other company's products - make sure that they are with same or better characteristics.

10 "Arch. Bogdan Tomalevski" Str.
Mladost 4, 1715 Sofia, Bulgaria
Tel.: +359 2 448 57 44
Fax.: +359 2 448 57 49
www.safetyeng.eu

EUR: BG75UNCR70001520885679
BGN: BG32UNCR70001520885677
Bank: UniCredit Bulbank AD
BIC code: UNCRBGSF
VAT number: BG 175376730

ALWAYS Follow the manufacturer's anchoring instructions as shown below:



NOTE: The HILTI instructions quoted here are for reference for the different types of anchoring and are a reference for the minimal requirements.

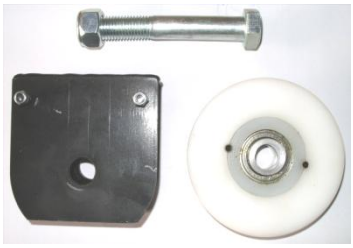
HILTI name, logo, branding and colors are registered trademark of Hilti Corp., LI-9494 Schaan, Principality of Liechtenstein

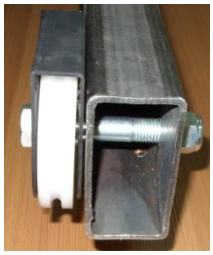
10 "Arch. Bogdan Tomalevski" Str.
Mladost 4, 1715 Sofia, Bulgaria
Tel.: +359 2 448 57 44
Fax.: +359 2 448 57 49
www.safetyeng.eu

EUR: BG75UNCR70001520885679
BGN: BG32UNCR70001520885677
Bank: UniCredit Bulbank AD
BIC code: UNCRBGSF
VAT number: BG 175376730

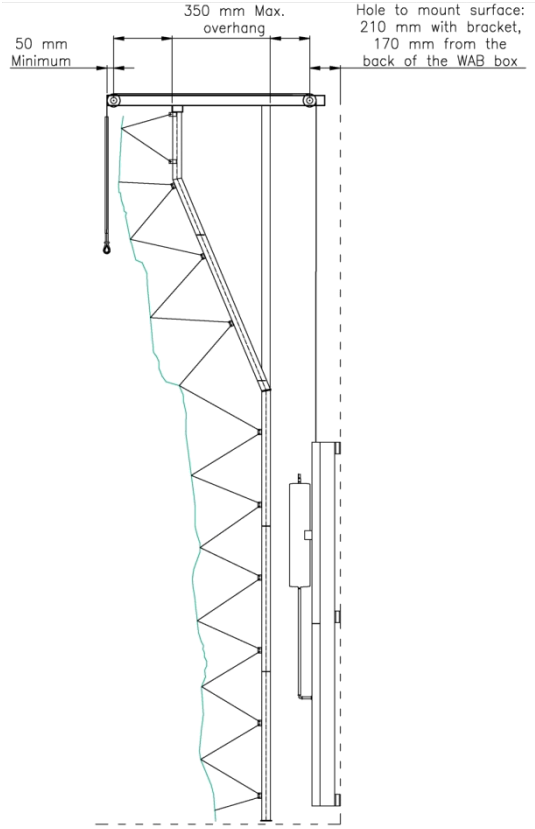
Davit installation

Your **Onbelay** autobelay comes with 2 pulleys for installation on a davit made of steel tube 100x50x4, S 235:

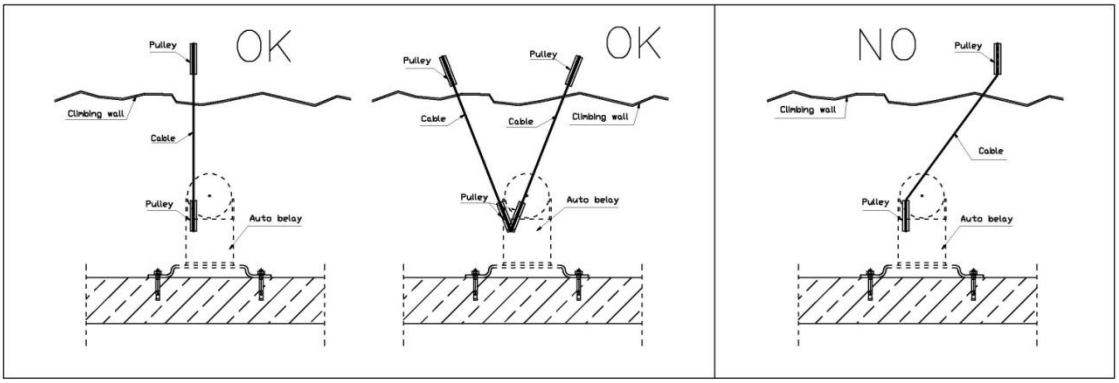




Follow the diagram below to determine the davit length, position and the pulleys location. Using 16 mm drill, make the holes along the short side of the tube (thru the 100mm side) and install the pulleys. Make sure that you tighten them securely! Fix the davit securely to the structure with proper fixings and hardware.



When mounting the davit, it is extremely important that the rear davit pulley is aligned with the exit pulley in the belay box. If the pulleys are not aligned properly there will be excessive wear on both the pulleys and the cable:



10 "Arch. Bogdan Tomalevski" Str.
Mladost 4, 1715 Sofia, Bulgaria
Tel.: +359 2 448 57 44
Fax.: +359 2 448 57 49
www.safetyeng.eu

EUR: BG75UNCR70001520885679
BGN: BG32UNCR70001520885677
Bank: UniCredit Bulbank AD
BIC code: UNCRBGSF
VAT number: BG 175376730

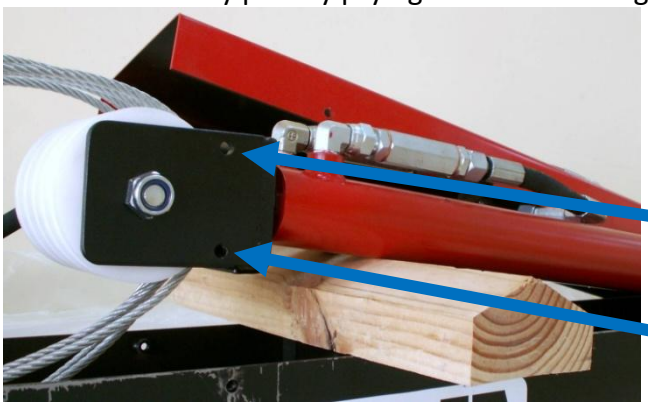
Maintenance

Replacing the cable

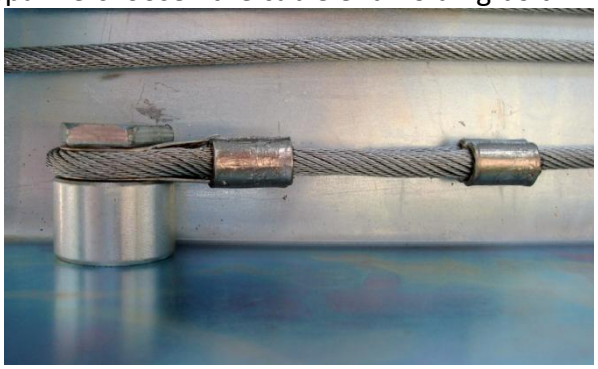
WARNING: It is VERY IMPORTANT to follow this procedure strictly. Failing to do so may result in serious INJURY or DEATH of the user!

First make sure that the **Onbelay** autobelay is fully retracted. Then make sure that you have enough room to work and all tools necessary. Keep this instruction in close vicinity and double check all steps!
Open the **Onbelay** autobelay covers by unscrewing the side bolts and by pulling the covers out:

Lift the rams and place a piece of wood or other similar bar under them so the pulley block is fully out of the box. Remove the safety pins by prying out the retaining rings and by pulling the pins fully out:



Using spanners loosen the cable end holding bolt.

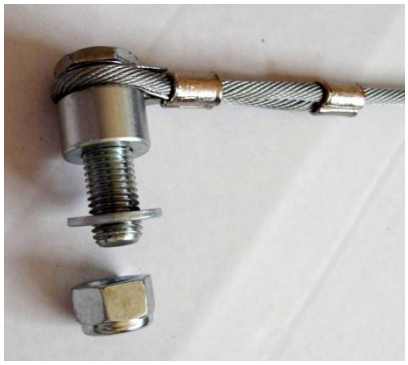
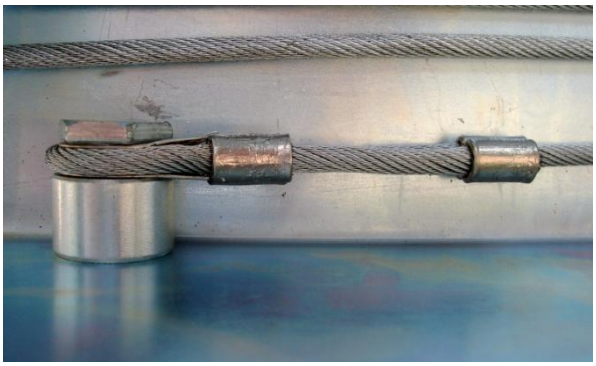


Remove the cable by guiding it out from the pulleys.
Start guiding the new cable starting from the top left (when facing the static top pulley block of the **Onbelay** autobelay) and run the cable consequently thru the pulleys:

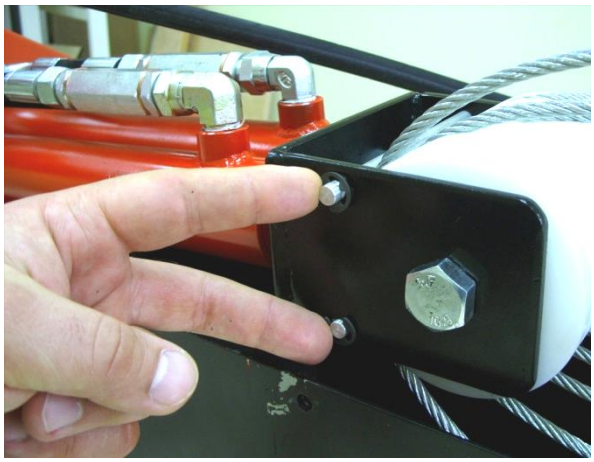
10 "Arch. Bogdan Tomalevski" Str.
Mladost 4, 1715 Sofia, Bulgaria
Tel.: +359 2 448 57 44
Fax.: +359 2 448 57 49
www.safetyeng.eu

EUR: BG75UNCR70001520885679
BGN: BG32UNCR70001520885677
Bank: UniCredit Bulbank AD
BIC code: UNCRBGSF
VAT number: BG 175376730

Assemble the bolt, washer, thimble and spacer in the order shown and tighten securely the bolt. Make sure that the cable exits the bolt parallel to the bottom of the box:

Install and secure the safety pins, double check to make sure that the cable seats properly in all pulleys, close all covers and fill with permanent ink the cable replacement log table, located on the bottom cover:



CABLE REPLACEMENT LOG / REGISTERBUCH FÜR DIE WECHSELUNG DER KABEL / REGISTRE DE REMPLACEMENT DES CÂBLÉS / REGISTRO DI SOSTITUZIONE DEL CAVO / REGISTRO DE SUSTITUCIÓN DE CABLE / РЕГИСТРАЦИЯ ЗАМЕНЫ КАБЕЛЯ	
CABLE LENGTH / KABELLÄNGE / LONGUEUR DE CABLE / LUNGHEZZA DEL CAVO / LONGITUD DEL CABLE / ДЛИНА КАБЕЛЯ	
DATE / DATUM / DATE / DATA / FECHA / ДАТА	SIGNATURE / UNTERSCHRIFT / SIGNATURE / FIRMA / SIGNATURA / ПОДПИСЬ

Install the **Onbelay** autobelay and run the cable thru the davit pulleys. Using a pilot rope, cycle it 5-10 times all the way to ensure smooth operation. Let it fully retract and perform the oil level check and air tank pressure check.

10 "Arch. Bogdan Tomalevski" Str.
Mladost 4, 1715 Sofia, Bulgaria
Tel.: +359 2 448 57 44
Fax.: +359 2 448 57 49
www.safetyeng.eu

EUR: BG75UNCR70001520885679
BGN: BG32UNCR70001520885677
Bank: UniCredit Bulbank AD
BIC code: UNCRBGSF
VAT number: BG 175376730

Oil adding

Throughout the exploitation of the **Onbelay** autobelay a small amount of oil seeps thru the seals and escapes. This is normal.
To add oil, perform the following procedure:

- Using a pilot rope retract the cable all the way to the top of the wall.
- Clearly mark the climbing area of the serviced **Onbelay** autobelay with "OUT OF SERVICE" sign or in different way make this unit unreachable for use.
- Make sure that the hydraulic rams are fully retracted by looking thru the gap between the 2 covers.
- Release the air pressure in the tank by depressing the valve pin until the pressure gauge shows no pressure and the air stops to escape:

- Using spanner unscrew the pressure gauge. Carefully clean any remaining Teflon tape from the hole. Pay attention not to damage the gauge!
- Using a small funnel introduce the hydraulic fluid into the tank until the level reaches above the medium of the sight glass.

CAUTION: Use only ATF fluid DEXRON III / MERCON when filling!

- Clean the old Teflon tape from the Pressure gauge and apply a new one. Using spanner, screw in the gauge to the tank. Pay attention not to cross thread!
- Use an air compressor or a large bicycle/automotive pump to pressurize the tank.
  4.8 ÷ 5.2 bar (70 ÷ 75 PSI)
- Using soap water, check for any air leaks around the gauge thread and pressurizing valve.
- Using the pilot rope, cycle the autobelay all the way up and down 4 – 5 times to make sure that it works properly.
- Perform **Brake action and pull up force Test**
- Re-check the oil level and the Air pressure.

Fixing oil leaks

Throughout the exploitation of the **Onbelay** autobelay a small amount of oil seeps thru the seals and escapes. This is normal.
If there are any major leaks, perform the following steps:

- Unscrew the bottom cover of the **Onbelay** autobelay and carefully turn it aside enough to see inside the **Onbelay** autobelay.
- Using flash light, thoroughly inspect all fittings and hoses. If you find that there is a loose fitting – use a spanner to tighten it with up to ¼ of a turn. Wipe clean the area and continue with the **Oil adding** procedure. Keep inspecting for fresh oil stains.

10 "Arch. Bogdan Tomalevski" Str.
Mladost 4, 1715 Sofia, Bulgaria
Tel.: +359 2 448 57 44
Fax.: +359 2 448 57 49
www.safetyeng.eu

EUR: BG75UNCR70001520885679
BGN: BG32UNCR70001520885677
Bank: UniCredit Bulbank AD
BIC code: UNCRBGSF
VAT number: BG 175376730

- If the problem persists – DO NOT TIGHTEN ANY MORE! Release the pressure fully, drain the hydraulic fluid and unscrew the corresponding fitting. Change the seal / fitting and reassemble. Continue with the Oil adding procedure.
- If there is a mechanical failure such broken hose, crack in the tank or in the welds – release all the pressure and immediately stop using the device. Contact SAFETY ENGINEERING for ordering a replacement parts.

Adjusting the air pressure

Throughout the exploitation of the **Onbelay** autobelay and the season's changes the pressure in the tank may drop - a small amount of air escapes thru the seals. This is normal.
Using a pilot rope let the cable retract all the way up to the top of the wall. In this condition check the air pressure in the tank. For **Onbelay** it must be **4.8 ÷ 5.2 bar (70 ÷ 75 PSI)**. If it is less – use an air compressor or a large bicycle/automotive pump to add pressure.

Checking for air leaks

If the pressure begins to drop rapidly (below the minimal allowed pressure in less than a week) without any hydraulic leaks– pressurize the tank and spray soapy water over the tank, weld seams, valves, gauges and fittings. Observe for bubbles coming out.

- If is leaking from a thread connection – tighten with up to ¼ of a turn. If the problem persists – DO NOT TIGHTEN ANY MORE! Release the pressure fully, unscrew the corresponding fitting, change the seal/Teflon tape and reassemble. Perform the soap water check again.
- If there is a mechanical failure such crack in the tank or in the welds, broken valve or gauge – immediately stop using the device and contact SAFETY ENGINEERING for ordering a replacement parts.

If you have a warranty claim or require service

In the unlikely event of a warranty claim or in case you need service, fill in and submit the **Onbelay** autobelay Service/Repair Request Form along with all documents described in the form to the SAFETY ENGINEERING Customer Service Department at:

10 "Arch. Bogdan Tomalevski" Str.
Mladost 4, 1714 Sofia, Bulgaria

or

Phone: +359 2 448 57 44
Fax: +359 2 448 57 49
E-mail: customercare@safetyeng.eu

Warranty claim service must be performed as approved by the SAFETY ENGINEERING Customer Service Department. Warranty replacement hardware systems and components or parts will be furnished freight prepaid. Labor cost to repair or replace will be limited to the amount of the original purchase price of the systems and components. The replaced warranty products or parts become the property of SAFETY ENGINEERING and must be returned to the SAFETY ENGINEERING Customer Service Department freight prepaid, unless prior arrangements have been made.

10 "Arch. Bogdan Tomalevski" Str.
Mladost 4, 1715 Sofia, Bulgaria
Tel.: +359 2 448 57 44
Fax.: +359 2 448 57 49
www.safetyeng.eu

EUR: BG75UNCR70001520885679
BGN: BG32UNCR70001520885677
Bank: UniCredit Bulbank AD
BIC code: UNCRBGSF
VAT number: BG 175376730

Onbelay Autobelay Service/Repair Request Form

Date: .....

Client: .....

Place/Project: .....

Contact Info on the Place of use, Operator's Name, Tel., E-mail: .....

.....

Onbelay Model: ..... Serial No: .....

The request is for Repairs and/or technical service ☐ The request is for Spare parts ☐

The Unit is under Warranty ☐ The Unit is NOT in Warranty ☐

The operator is aware and understands the User manual and is familiar with the use and daily maintenance ☐

Description of the problem:

I have problem with the Oil ☐ I have problem with the Air ☐ I have Cable problem ☐

I have other problem ☐

.....

.....

.....

.....

.....

Please submit copies of the following mandatory documents:

1. Copy of the original signed Warranty Card;
2. Copy of the Inspection and Maintenance Logbook with the entries from the past 3 months;
3. Copies of the Daily Check List for the past 14 days of operation.

NOTE: *In order to provide you with the best service - Please fill in this form completely and submit ALL required info, including photos of the problem!*

This page may be copied

10 "Arch. Bogdan Tomalevski" Str.
Mladost 4, 1715 Sofia, Bulgaria
Tel.: +359 2 448 57 44
Fax.: +359 2 448 57 49
www.safetyeng.eu

EUR: BG75UNCR70001520885679
BGN: BG32UNCR70001520885677
Bank: UniCredit Bulbank AD
BIC code: UNCRBGSF
VAT number: BG 175376730

Inspection and Maintenance Log

Use this log to keep a record of the Inspections and maintenance activities not covered by the daily inspection checklists such as Monthly & Yearly inspections, replacement parts, calls to SAFETY ENGINEERING Ltd, etc.

Onbelay autobelay Serial No:.....

Date	Reason/Problem	Activity description	Name & Signature	Date of next inspection

This page may be copied